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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/035,736	11/07/2001	Thomas W. Smith	D/A1442	5048

7590

04/19/2004

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EXAMINER

SHOSHO, CALLIE E

ART UNIT

PAPER NUMBER

1714

DATE MAILED: 04/19/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/035,736

Applicant(s)

SMITH ET AL.

Examiner

Callie E. Shosho

Art Unit

1714

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 March 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-44 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-30, 34-39 and 43-44 is/are rejected.
- 7) ☐ Claim(s) 31-33 and 40-42 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. In the office action mailed 2/25/04, claims 28, 31-34, 37, and 40-43 were indicated as objected to as being dependent upon a rejected base claim but allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 28, 34, and 37 are each drawn to quaternary ammonium substituted UV absorbing compound which is a hydroxybenzophenone quaternary compound. These claims were indicated as objected to given that there was no disclosure or suggestion in the "closest" prior art, i.e. Gundlach et al. (U.S. 6,054,505), Vieira et al. (U.S. 5,096,781), and WO 97/20000, of these specific quaternary ammonium substituted UV absorbing compounds.

However, upon reconsideration of Vieira et al., it is noted that the reference does in fact disclose quaternary ammonium substituted UV absorbing compound which is a hydroxybenzophenone quaternary compound. Such disclosure necessitates the new grounds of rejection as set forth in paragraph 5 below.

In light of the above, the after-final amendment filed 3/26/04 has not been entered so that applicants can respond to these new grounds of rejection as set forth below.

Thus, the finality of the office action mailed 2/25/04 has been withdrawn and the following action is non-final. It is noted that in addition to the new grounds of rejection, the rejections of record as set forth in the office action mailed 2/25/04 are also restated below.

Claim Rejections - 35 USC § 103

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

3. Claims 1-27, 30, 36, and 39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gundlach et al. (U.S. 6,054,505) in view of Vieira et al. (U.S. 5,096,781).

The rejection is adequately set forth in paragraph 3 of the office action mailed 8/26/03 and is incorporated here by reference.

4. Claims 1-26, 29, 35, 38, and 44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gundlach et al. (U.S. 6,054,505) in view of WO 97/20000.

The rejection is adequately set forth in paragraph 4 of the office action mailed 8/26/03 and is incorporated here by reference.

5. Claims 1-7, 9-17, 19-26, 28, 34, 37, and 43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gundlach et al. (U.S. 6,054,505) in view of Vieira et al. (U.S. 5,096,781).

Gundlach et al. disclose ink comprising water, 0.1-40% nonpolymeric salt, 1-5% anionic dye, and 0.01-50% polyquaternary amine such as polydiallyl dimethyl ammonium, polyquaternized polyvinylamine, polyquaternized polyallylamine, epichlorohydrin/amine, cationic amido amine, and copolymer of vinyl pyrrolidone and vinyl imidazolium salt. In one embodiment, the anionic dye complexes with the polyquaternary amine. It is further disclosed that the above ink is preferably printed using thermal ink jet printer but Gundlach et al. also

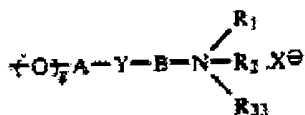
disclose the use of other conventionally known ink jet printing methods including piezoelectric ink jet process (col.1, lines 8-17 and 41-43 and 44-47, col.2, line 46-col.3, line 3, col.6, lines 62-65, col.7, lines 25-27 and 40-55, col.13, lines 15-17 and 31-32, col.15, lines 42-45, col.19, lines 51-58, col.22, lines 35-38, and col.23, lines 18-24).

The difference between Gundlach et al. and the present claimed invention is the requirement in the claims of quaternary ammonium substituted UV absorbing compound.

Vieira et al. disclose the use of 0.01-20% light stabilizer of the formula:



where U is radical of hydroxybenzophenone and SOL is:



where g is 0, A is alkylene group, Y is direct bond or C(O)NR¹ where R¹ is hydrogen, B is alkylene group, and R₁, R₂, and R₃₃ are each alkoxy group, alkyl group, or aryl group. It is disclosed that the light stabilizer is used in ink jet inks. The motivation for using such light stabilizer is to protect ink against damage caused by light, oxygen, and heat (col.1, lines 5-8, col.2, lines 11-15, col.17, lines 42-45, col.17, line 53-col.19, line 50, col.20, lines 8-9, col.22, lines 61-63, and col.23, lines 1-3).

In light of the motivation for using light stabilizer disclosed by Vieira et al. as described above, it therefore would have been obvious to one of ordinary skill in the art to use such light stabilizer in the ink of Gundlach et al. in order to produce ink with excellent resistance to light, oxygen, and heat, and thereby arrive at the claimed invention.

Allowable Subject Matter

6. Claims 31-33 and 40-42 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

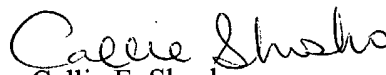
Claims 31-33 and 40-42 would be allowable if re-written in independent form as described above given that there is no disclosure or suggestion in the "closest" prior art, i.e. Gundlach et al. (U.S. 6,054,505), Vieira et al (U.S. 5,096,781), or WO 97/20000, of specific quaternary ammonium substituted UV absorbing compound as required in these claims.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Callie E. Shosho whose telephone number is 571-272-1123. The examiner can normally be reached on Monday-Friday (6:30-4:00) Alternate Fridays Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on 571-272-1119. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Callie E. Shosho
Primary Examiner
Art Unit 1714

CS
4/14/04